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EXAMINER

SHEPELEV, KONSTANTIN

ART UNIT	PAPER NUMBER
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2131

NOTIFICATION DATE	DELIVERY MODE
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09/22/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/539,196	Applicant(s) EVOY, DAVID R	
	Examiner KONSTANTIN SHEPELEV	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/23/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to application filed on July 17, 2005 in which claims 1-45 are presented for examination.

Status of Claims

Claims 1-45 are pending; of which claims 1, 2, 14, 15, 23, 32, and 42 are in independent form. Claim 35 is rejected under 35 U.S.C. 112, 2nd. Claims 35 and 45 are rejected under 35 U.S.C. 101. Claims 1-45 are rejected under 35 U.S.C. 103(a).

Specification

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Art Unit: 2131

- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations

Art Unit: 2131

to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Examiner noticed that all of the necessary sections of the specification appeared to be present in current application, however, none of them were labeled properly.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the Drawings 1-10 must be shown with the features appropriately labeled. Examiner noted that features of the claimed invention are properly referenced in specification and drawings, but can present a comprehension issue because of the missing labels. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure

Art Unit: 2131

must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 13, it is found to be indefinite because it depends on claim 2 which is directed to a circuit arrangement, while claim 13 is directed to a program product.

With respect to claim 41-45, it is found to be indefinite because it depends on claim 32 which is directed to a circuit arrangement, while claim 41-45 is directed to a program product, , access card and data processing system.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13 and 45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 13 recites “a program product comprising hardware definition code.” Further, on page 8, lines 1-4 of instant specification applicant teaches that a hardware definition program code is a computer data, which is clearly a functional descriptive material, software, per se. When recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. However, the claim language lacks the necessary computer readable medium, and as such fails to fall within one of four statutory categories of invention according to 35 U.S.C. 101.

In addition, claim 13 recites “a signal bearing medium.” On page 8, lines 12-17 of the instant specification, applicant has provided evidence that applicant intends the signal bearing medium to include transmission type media, which can be interpreted as signals by one of the ordinary skill in the art. As such, the claims are drawn to a form of energy. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical article or object and as such is not a machine or manufacture. Energy is not a combination of substances and therefor not a composition of matter. Energy is not one of the four categories of invention and therefore this claim is not statutory.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (EP 0,875,813 A2) in view of Paskins et al. (EP 0,952,733 A2), Mowery et al. (US 2003/0081391 A1), and Abbott et al. (US6,141,324).

With respect to claim 1, Ishiguro teaches the limitation of “a first integrated circuit, the first integrated circuit including a first logic block configured to generate a data stream” (Fig. 3 and 10; page 6, line 19) as the firmware that transmits data to personal computer.

In addition, Ishiguro teaches the limitation of “a first integrated circuit, the first integrated circuit including a hardware encryption circuit coupled to the first logic block and configured to encrypt the data stream to generate an encrypted data stream” (Fig. 3 and 10; page 2, lines 36-37) as enciphering means for enciphering data.

Additionally, Ishiguro teaches the limitations of “a second PCI- Express-compatible interface circuit coupled to the PCI-Express-compatible interconnect to receive the encrypted data stream over the dedicated encrypted virtual channel, the second PCI-Express-compatible interface including a plurality of channel interconnects, each associated with a virtual channel among the plurality of virtual channels” and “a hardware decryption circuit coupled to a first channel interconnect among the plurality of channel interconnects for the second PCI-Express-compatible interface circuit and configured to decrypt the encrypted data stream” (Fig. 3 and 10;

Art Unit: 2131

page 2, lines 47-48) as receiving means for receiving enciphered data and deciphering means for deciphering data.

Further, Ishiguro teaches the limitation of “a second logic block coupled to the hardware decryption circuit and configured to use the decrypted data stream” (Fig. 3 and 10).

Finally, Ishiguro teaches the limitation of “control logic coupled to at least one of the first and second PCI-Express- compatible interface circuits and configured to communicate authorization data over the default virtual channel to authorize secure communication between the first and second integrated circuits over the dedicated encrypted virtual channel” (Fig. 3; page 5, lines 19-22) as firmware and a license manager carrying out the authentication procedure between one of software programs stored in the ROM of the DVD and one of software programs stored in the ROM of the personal computer.

It is noted, however, that Ishiguro does not explicitly teach the limitations of “a PCI-Express-compatible interface circuit configured to support data communication over a plurality of PCI-Express virtual channels”, “wherein the first PCI-Express-compatible interface circuit includes a plurality of channel interconnects, each associated with a virtual channel among the plurality of virtual channels”, “wherein a first channel interconnect among the plurality of virtual channels is coupled to the hardware encryption circuit to receive the encrypted data stream”, and “wherein the first PCI- Express-compatible interface circuit is configured to communicate the encrypted data stream from the hardware encryption circuit over the dedicated encrypted virtual channel.”

On the other hand, Ishiguro teaches that the interconnection for the elements of his invention is provided through the 1394 bus through 1394 interface (page 4, lines 47-48).

Art Unit: 2131

In addition, Paskins teaches a transport stream interface in which various virtual channels are time-multiplexed (column 1, paragraph 0003) which is implemented on IEEE 1394 Serial Bus (Abstract).

It is further noted that neither Ishiguro not Paskins teach the limitation of “PCI-Express-compatible interface circuit.”

However, Mowery teaches this limitation (page 2, paragraph 0023) as the present invention is operable with other technical standards. For example, rather than USB or USB 2.0, the present invention is also operable with Institute of Electrical and Electronics Engineers (IEEE) 1394 (FireWire), Ethernet, and serial and parallel communications ports, peripheral components interconnect (PCI), PCI-X, and PCI-Express to list a few.

Furthermore, it is noted that Ishiguro does not explicitly teach the limitation of “the plurality of PCI-Express virtual channels includes an unencrypted default virtual channel and a dedicated encrypted virtual channel configured to communicate encrypted data exclusively”

On the other hand, Abbott teaches the abovementioned limitation (Fig. 4; column 8, line 61 – column 9, line 1) as all communications between the modems can be implemented in a dedicated communication channel. This dedicated communication channel can be a dedicated virtual channel, or a dedicated physical channel.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate teachings Paskins into the system of Ishiguro to provide a higher throughput by multiplexing plurality of channels. Further, it would also be obvious to incorporate teachings of Mowery into the system of Ishiguro and Paskins to provide greater bandwidth and decrease in power consumption. Furthermore, it would have been obvious to one

Art Unit: 2131

of the ordinary skill in the art to incorporate teachings of Abbott into the system of Ishiguro, Paskins, and Mowery to provide a secure channel for data transfer.

Claims 2-4, 9-12, and 14 are rejected in view of the same reasons stated in the rejection of independent claim 1.

With respect to claims 5-8, Paskins teaches a transport stream interface in which various virtual channels are time-multiplexed (column 1, paragraph 0003) which is implemented on IEEE 1394 Serial Bus (Abstract) that can be used for the throughput control of the system. In addition, Abbott teaches the limitation of dedicated virtual communication channel (Fig. 4; column 8, line 61 – column 9, line 1) that can be used to ensure the security of the data transfers.

With respect to claim 13, it is rejected in view of the reasons stated in the rejection of claim 2. Furthermore, Examiner takes an official notice that hardware definition files are well known in the art. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use such a file for the circuit design purposes.

Claim 14 are rejected in view of the same reasons stated in the rejection of independent claim 1.

With respect to claims 15-17 and 20-22, they are rejected in view of the same reasons as stated in the rejection of independent claim 1.

With respect to claims 18 and 19, they are rejected in view of the same reasons as stated in the rejection of claims 5-8.

7. Claims 23-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiguro et al. (EP 0,875,813 A2) in view of Paskins et al. (EP 0,952,733 A2), and further in view of Abbott et al. (US6,141,324).

With respect to claim 23, Ishiguro teaches the limitation of “re-encrypting the first decrypted data stream in the first integrated circuit to generate a second encrypted data stream” (Fig. 3 and 10; page 2, lines 36-37) as enciphering means for enciphering data.

In addition, Ishiguro teaches the limitation of “communicating the second encrypted data stream from the first integrated circuit to a second integrated circuit” (Fig. 3 and 10; page 6, line 19) as the firmware that transmits data to personal computer.

Finally, Ishiguro teaches the limitation of “decrypting the second encrypted data stream in the second integrated circuit to generate a second decrypted data stream” (Fig. 3 and 10; page 2, lines 47-48) as receiving means for receiving enciphered data and deciphering means for deciphering data.

It is noted however, that Ishiguro does not explicitly teach the limitations of “decrypting a first encrypted data stream in a first integrated circuit to generate a first decrypted data stream”, “a multi-channel serial interconnect to which the first and second integrated circuits are connected”, and “a dedicated encrypted virtual channel among a plurality of virtual channels supported by the multi-channel serial interconnect”.

On the other hand, Paskins teaches the limitation of “decrypting a first encrypted data stream in a first integrated circuit to generate a first decrypted data stream” (Fig. 1) as a path that goes through Demodulator 16, Descrambler 18, and Demultiplexer 20.

In addition, Paskins teaches the limitation of “a multi-channel serial interconnect to which the first and second integrated circuits are connected” (column 1, paragraph 0003) as a transport stream interface in which various virtual channels are time-multiplexed, which is implemented on IEEE 1394 Serial Bus (Abstract).

In addition, Abbott teaches the limitation of “a dedicated encrypted virtual channel among a plurality of virtual channels supported by the multi-channel serial interconnect” (Fig. 4; column 8, line 61 – column 9, line 1) as all communications between the modems can be implemented in a dedicated communication channel. This dedicated communication channel can be a dedicated virtual channel, or a dedicated physical channel.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to incorporate teachings Paskins into the system of Ishiguro to provide a higher throughput by multiplexing plurality of channels. Further, it would have been obvious to one of the ordinary skill in the art to incorporate teachings of Abbott into the system of Ishiguro and Paskins to provide a secure channel for data transfer.

With respect to claim 24, Paskins teaches the limitation of “demodulating a modulated input signal to generate the first encrypted data stream” (Fig. 1) as demodulator 16.

Art Unit: 2131

With respect to claims 25 and 26, Paskins teaches the limitation of “decoding the second decrypted data stream in the second integrated circuit to generate a decoded data stream” and “wherein the modulated input signal comprises a satellite broadcast signal, wherein the first encrypted data stream comprises an encrypted MPEG data stream, and wherein decoding the second decrypted data stream in the second integrated circuit comprises performing MPEG decoding on the second decrypted data stream” (Fig. 1) as MPEG Decoder.

With respect to claim 27, it is noted that neither of Ishiguro, Paskins and Abbott teach the limitation of “performing regional access control on the first encrypted data stream.”

However, examiner takes the official notice that using the regional encoding to protect the data distributed on DVDs is well known in the art. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use such a technique to access data distributed on DVD.

With respect to claim 28, Ishiguro teaches the limitation of “performing subscriber access control on the first encrypted data stream” (Fig. 3; page 5, lines 19-22) as firmware and a license manager carrying out the authentication procedure between one of software programs stored in the ROM of the DVD and one of software programs stored in the ROM of the personal computer.

With respect to claim 29, Paskins teaches the limitation of “the first and second integrated circuits are disposed in a set top box” (Fig. 6; column 16, paragraph 0118) as a device

Art Unit: 2131

such as a host receiver or Conditional Access Module implementing a Command Interface over an IEEE 1394 Serial Bus.

With respect to claim 30, Paskins teaches the limitation of “the first integrated circuit is disposed on an access card coupled to the second integrated circuit via a connector” (column 10, lines 41-44) as the DVB Common Interface has been designed with a layered architecture to allow new physical layers (for example the smart card form factor).

With respect to claim 31, it is rejected in view of the same reasons stated in the rejection of independent claim 23.

With respect to claims 32-41, they are rejected in view of the same reasons stated in the rejection of claims 23-31

With respect to claim 43, it is rejected in view of the same reasons as stated in the rejection of independent claim 23.

With respect to claim 44, it is rejected in view of the same reasons as stated in the rejection of claim 30.

With respect to claim 45 as dependent on claim 32, it is rejected in view of the same reasons stated in the rejection of claim 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KONSTANTIN SHEPELEV whose telephone number is (571)270-5213. The examiner can normally be reached on Mon - Thu 8:30 - 18:00, Fri 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571)272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Konstantin Shepelev/
Examiner, Art Unit 2131

9/12/2008

/Syed Zia/
Primary Examiner, Art Unit 2131